

WHAT IS CLAIMED IS:

1                   1.       A device for processing an image, the device comprising:  
2                   a decryption module configured to receive graphics data, wherein at least a  
3                   portion of the received graphics data is encrypted, and to decrypt the graphics data based at  
4                   least in part on a decryption parameter;  
5                   a key module configured to receive key data and to provide the decryption  
6                   parameter to the decryption module in response to the key data; and  
7                   an image generation module coupled to receive the decrypted graphics data  
8                   from the decryption module and configured to transform the decrypted graphics data to  
9                   displayable image data.

1                   2.       The device of claim 1 wherein the decryption module is further  
2                   configured to provide the encrypted graphics data to the image generation module in the  
3                   event that the key module does not provide the decryption parameter.

1                   3.       The device of claim 1 wherein the encrypted portion of the graphics  
2                   data is encrypted by applying a perturbation, the perturbation being removable by the  
3                   decryption module.

1                   4.       The device of claim 1 wherein the key data includes the decryption  
2                   parameter.

1                   5.       The device of claim 1 wherein the key module is further configured to  
2                   compute the decryption parameter using the key data.

1                   6.       The device of claim 1 wherein the key module includes a receptacle for  
2                   a key device and wherein the key module is further configured to obtain the key data from the  
3                   key device.

1                   7.       The device of claim 6 wherein the decryption parameter corresponds to  
2                   the presence or absence of the key device in the receptacle.

1                   8.       The device of claim 6 wherein the key device is configured to store the  
2                   key data and the key module is configured to read the key data when the key device is present  
3                   in the receptacle.

1                   9.       The device of claim 1 wherein the key module receives the key data  
2 from a sender and the decryption module receives the graphics data from the same sender.

1                   10.       The device of claim 1 wherein the key module is further configured to  
2 receive either of first key data and second key data and to provide a first decryption  
3 parameter in response to the first key data and a second decryption parameter in response to  
4 the second key data,  
5                   wherein in response to the first decryption parameter, the decryption module  
6 completely decrypts the graphics data and, in response to the second decryption parameter,  
7 the decryption module decrypts the graphics data with a residual distortion.

1                   11.       A system for generating images, the system comprising:  
2                   a sender device configured to send graphics data via a communication  
3 channel, wherein at least a portion of the graphics data is encrypted;  
4                   a recipient device including:  
5                   a decryption module configured to receive the encrypted graphics data  
6 and to decrypt the graphics data based at least in part on a decryption parameter;  
7                   a key module configured to receive key data and to provide the  
8 decryption parameter to the decryption module in response to the key data; and  
9                   an image generation module coupled to receive the decrypted graphics  
10 data from the decryption module and configured to transform the graphics data to displayable  
11 image data.

1                   12.       The system of claim 11 wherein the sender device and the recipient  
2 device communicate via a bus.

1                   13.       The system of claim 12 wherein the sender device is a central  
2 processing unit and the recipient device includes a graphics processing unit.

1                   14.       The system of claim 11 wherein the sender device and the recipient  
2 device communicate via a network.

1                   15.       The system of claim 11 wherein the key module includes a receptacle  
2 for a key device, the key device providing the key data to the key module.

1                   16.     The system of claim 11 wherein the key data includes the decryption  
2     parameter.

1                   17.     The system of claim 11 wherein the key module is further configured  
2     to compute the decryption parameter using the received key data.

1                   18.     The system of claim 11 wherein the key module is configured to  
2     receive either of first key data and second key data and further configured to provide a first  
3     decryption parameter in response to the first key data and a second decryption parameter in  
4     response to the second key data,  
5                   wherein in response to the first decryption parameter, the decryption module  
6     completely decrypts the graphics data and, in response to the second decryption parameter,  
7     the decryption module decrypts the graphics data with a residual distortion.

1                   19.     A method of generating an image, the method comprising:  
2                   receiving graphics data for the image, wherein at least a portion of the  
3     received graphics data is encrypted;  
4                   determining whether a key is present; and  
5                   in response to determining that the key is present:  
6                         decrypting the encrypted portion of the graphics data; and  
7                         rendering an image using the decrypted graphics data.

1                   20.     The method of claim 19, further comprising:  
2                   in response to determining that the key is not present, rendering an image  
3     using the received graphics data including the encrypted portion.

1                   21.     The method of claim 19 further comprising:  
2                   in response to determining that the key is present, extracting a decryption  
3     parameter from the key,  
4                   wherein the act of decrypting the encrypted portion of the graphics data is  
5     responsive to the decryption parameter.

1                   22.     The method of claim 19, further comprising, prior to the act of  
2     receiving the graphics data:  
3                   encrypting at least a portion of the graphics data; and

4 transmitting the graphics data.

1 23. The method of claim 22 wherein the act of transmitting the graphics  
2 data is performed using a system bus.

1 24. The method of claim 23 wherein the act of encrypting is performed by  
2 a central processing unit executing a graphics driver program.

1 25. The method of claim 22 wherein the act of transmitting the graphics  
2 data is performed using a network.

1 26. The method of claim 19 wherein the act of determining whether the  
2 key is present includes detecting a presence or absence of a key device.

1 27. The method of claim 19 wherein the act of determining whether the  
2 key is present includes detecting a presence or absence of key data.

1 28. The method of claim 19 wherein the act of decrypting the graphics data  
2 includes:  
3 restoring the graphics data to its unencrypted state; and  
4 perturbing a parameter value of the restored graphics data based on a  
5 perturbation parameter.

1 29. The method of claim 28 wherein the parameter value is a vertex  
2 coordinate of a primitive.

1 30. The method of claim 28 wherein the perturbation parameter is  
2 determined from the key.

1 31. The method of claim 30 wherein the perturbation parameter  
2 corresponds to a clearance level associated with the key.

1 32. A method for sharing encrypted graphics data among a plurality of  
2 users, the method comprising:  
3 associating each of the plurality of users with a respective one of a plurality of  
4 keys for decrypting the encrypted graphics data;  
5 receiving the encrypted graphics data at a recipient device;

6                    receiving one of the plurality of keys at the recipient device, wherein the one  
7   of the plurality of keys is provided by the associated user; and  
8                    decrypting the encrypted graphics data based at least in part on the received  
9   key.

1                    33.     The method of claim 32 wherein each key includes an identifier of a  
2   clearance level and the act of decrypting the graphics data depends at least in part on the  
3   clearance level.

1                    34.     The method of claim 33 wherein during the act of decrypting, a  
2   perturbation is applied to the graphics data, the size of the perturbation being dependent on  
3   the clearance level.

1                    35.     The method of claim 33 wherein during the act of decrypting, the  
2   clearance level is used to determine whether to discard a portion of the graphics data.

1                    36.     The method of claim 32 wherein the act of associating each of the  
2   plurality of users with a respective one of the plurality of keys includes providing a respective  
3   hardware device for each user, each hardware device storing key data, and wherein the act of  
4   receiving one of the plurality of keys includes communicating with the hardware device.

1                    37.     The method of claim 36 wherein communicating with the hardware  
2   device includes receiving the hardware device in a receptacle of the recipient device.

1                    38.     The method of claim 32 wherein the act of associating each of the  
2   plurality of users with a respective one of the plurality of keys includes providing a password  
3   for each user, and wherein the act of receiving one of the plurality of keys includes receiving  
4   the password.